ABSTRACT:
The artistic parameters to be considered for essential beauty and those which are subtly present in natural beauty form the fundamental principles of esthetics. Understanding these artistic parameters of beauty and co-relating them to the dento-facial complex will enable the dentist to appropriately scale esthetics. Every person is not fortunate enough to have a beautiful smile. The answer to the above problem is the esthetic dentistry which has developed leaps and bounds with the latest technologies and materials. Prosthodontist is probably the best person to identify the quality of smile. Further he is also able to change the quality of smile with the recently available innovative techniques and the state of art restorative materials and to plan restorations, to harmonize with the smile.

Key words: Composition, proportion, balance, dominance, gingival, inter-pupillary.

INTRODUCTION
A charming smile can open doors and knock down barriers that stand between you and a fuller, richer life. An attractive or pleasing smile clearly enhances the acceptance of the individual in the society where he belongs. The character of the smile influences to the great extent the attractiveness and the personality of the individual.1

Basically the smile is dependent on the musculature and the presence of the teeth. But every person is not fortunate enough to have a beautiful smile. The answer to the above problem is the esthetic dentistry which has developed leaps and bounds with the latest technologies and materials. Prosthodontist is probably the best person to identify the quality of smile. Further he is also able to change the quality of smile with the
recently available innovative techniques and the state of art restorative materials and to plan restorations, to harmonize with the smile.2

PHYSICAL ATTRIBUTES OF THE ELEMENTS OF THE DENTO-FACIAL COMPOSITION

The artistic parameters to be considered for essential beauty and those which are subtly present in natural beauty form the fundamental principles of esthetics. Understanding these artistic parameters of beauty and co-relating them to the dento-facial complex will enable the dentist to appropriately scale esthetics in any dento-facial composition.3

Composition means the act of combining elements or parts to form a whole. There are various physical attributes of the elements of a composition that impart the esthetic value. The various physical attributes of the elements of a composition are as follows.

Contrast is that factor which makes the various elements of a composition visible. The eye can differentiate the parts of an object due to contrast of colors, lines, patterns, textures, etc. The relationship between the different parts of the face (facial), the teeth and the gums (dental) made visible by contrast constitutes the dento-facial composition.2

Unity or oneness gives different parts of the composition the effect of a whole”. Unity can either be static, when repeated shapes or designs are seen as in inanimate things, like the composition of crystals; or dynamic and changing as in living beings. Unity between different part of the face, and teeth is essential to give the effect of oneness or wholeness to the dento-facial composition.2

Symmetry is the regularity of arrangement of forms either from left to right as in horizontal symmetry, or from a central point to either side like a mirror image as in radiating symmetry. The horizontal symmetry looks repetitive and uninteresting while the radiating symmetry looks dynamic and interesting. In a dento-facial composition radiating symmetry of the teeth is more esthetically appealing and is associated with youthfulness while horizontal symmetry is less appealing and is associated with aging.3

Proportion is to give a certain mathematical representation of beauty for numerically expressing the relationship of the various units that combine to make a composition. The relationship of the various units which are different from each other in a composition but are associated with each other through a certain repetitive mathematical factor is the repeated ratio.
The proportion between the various elements of a harmonious composition, in which the cohesive and segregative forces are equally balanced and which has its various units in an esthetically appealing respective proportion to each other at the repeated ratio of 1:1.618 is the golden proportion.  

**Dominance** exists when a strong centralized structure is surrounded by well-demarcated, characterized structures. In a dento-facial composition it creates immaculate unity leading to a harmonious composition. The absence of dominance makes the composition weak. Color, shape and size are the factors which can control dominance.

**Balance** is achieved when there is an exact equilibrium between the forces present on either side of the fulcrum in a composition. In dentistry this implies the balance of the elements in relation to the midline. If any elements are imbalance on one side then, to create a visual balance either these elements are moved towards the midline or are counter-balanced with opposite elements to regain the balance. In balance the weight of the elements far away from the fulcrum grows in importance.

**Visual tension** is the tension brought about by the presence of certain elements that cause an imbalance in the given composition. If the presence of these factors is closer to the fulcrum, the effect of the tension into the fulcrum, the effective tension induced is more magnified as against their presence further from the fulcrum. A distally inclined lateral incisor on one side is compensated by a more mesial inclination of the first premolar on the opposite side to reduce the effective visual tension. These variations are naturally found in dentitions explaining the reason why sometimes irregularities in inclinations still produce pleasant smiles.

The esthetic orientation of the dental composition with the entire facial composition can be achieved by taking into consideration the references, smile elements, proportions and...
symmetry. These are the factors of esthetic compositions and they help the dentist in determining tooth display, size, arrangement and alignment during the diagnosis and treatment phase.3

The dento-facial frame constitutes the teeth and gingiva related to the lips and then to the entire face. The oral frame is determined by the anatomy and mobility of the tissues when in function surrounding the teeth and gingiva. The exposed portion of the oral element i.e. teeth and gums within the oral frame during a smile is called the smile window.

References can be classified as horizontal references, vertical references, sagittal references and phonetic references.

Horizontal references are the horizontal perspective of the face is provided by the interpupillary line and the commissural line. The interpupillary line helps to evaluate the orientation of the incisal plane, the gingival margins and the maxilla. An imaginary horizontal line through the incisal plane and the gingival margins should be visibly parallel to the interpupillary line. This helps to diagnose any asymmetry in the tooth position or gingival location. When an imaginary line is drawn across the gingival margins, it may not be parallel to the interpupillary line indicating a certain degree of canting of the maxilla. Certain amount of canting of maxilla is considered normal and in such cases mild correction of the gingival margins can achieve a pleasing symmetry severe canting may require an inter-disciplinary approach involving surgical repositioning of the maxilla.5

Vertical references are the facial midline serves to evaluate the location and axis of the dental midline and the medio-lateral discrepancies in tooth position. The interpupillary line and the facial midline emphasize the ‘T’ effect in a pleasing face. The dental midline, if perpendicular to the interpupillary line and coinciding with the bridge of the nose and the philtrum, produces an attractive orientation of the smile.

Axial inclination is the direction of the anterior teeth in relation to the central midline and becomes progressively more pronounced from the central incisor to the canine. There is a definite mesial inclination to all the anterior teeth related to the midline. The axes of the premolars and the first molar on either side also show mesial inclination in relation to the midline.6

Fig 10. Axial inclinations.

The perception of tooth inclination can be viewed from the frontal aspect around the central vertical midline, which acts like a fulcrum around which axial inclination of teeth on either side exhibit a phenomenon of balance of lines Natural smiles show a deviation from the standard axial inclination. Deviations in axial inclination cause a visual tension when beyond the point of equilibrium.4

Sagittal references are the soft tissue analysis at a standardized position helps in studying the profile of an individual. The contour of the upper and lower lip support is determined by the position of the anterior teeth and can be used as a guide for the placement of teeth when planning restorations. The lip protrusion, the amount of prominence of chin, recession or prominence of the nose and its degree, all helps in profile analysis for diagnosis and treatment planning.4

The E-line or esthetic line is an imaginary line connecting the tip of the nose to the most prominent portion of the chin on the profile, ideally the upper lip is 1-2 mm behind and the lower lip 2-3mm behind the E-line. Any change in the position of the E-line indicates the abnormality in the upper or lower lip position.

The main support of the upper lip is contributed by the gingival two thirds of the maxillary central incisors rather than the incisal one third. According to studies by Maritato and Douglas the lip support is a better guide of tooth position than of incisal edge position. The relationship of the maxillary incisal edges to the lower lip is a guide for the placement of the incisal edge position and length. The pronunciations of the ‘F’ and ‘V’ consonants helps to determine the position of the incisal edges. On pronouncing ‘F’ and ‘V’ the incisal edges should make a definite contact at the inner vermilion border of the lower lip Thus the position of the incisal third of the maxillary central incisor can be determined.6

Phonetic references play a part in determining maxillary central incisor design and position. ‘F’ and ‘V’ sounds are used to determine the tilt of the incisal third of the maxillary central incisors and their length. The ‘M’ sound is used to achieve relaxed rest position and repeated at slow intervals can help evaluate the incisal display at rest position ‘S’ or ‘Z’ sounds determine the vertical dimension of speech. Its pronunciation makes the maxillary and the mandibular anterior teeth come in near contact and determine the anterior speaking space. The amount of posterior speaking space varies with the amount of mandibular protrusion necessary to bring the anterior teeth in near contact for the ‘S’ sound.6

The extent of the smile is outlined by the curvature of the upper and lower lip and the position of the angle of the mouth, and it determines the degree of exposure, both in the anterior and posterior teeth, gingiva as well as the width of the buccal corridor.2

CONCLUSION

Dentistry is an ever changing science. As new research and clinical experience broaden our knowledge, changes in treatment are required. This paradigm shift in the field of dentistry comes along just in time to meet the final needs and wants of patient who perceives an attractive smile no longer as a luxury but rather a necessary part of their life style.

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